4371

Diag. Cht. No. 77-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ..... Office No. 4371

LOCALITY

State Maryland

General locality Patapsco

Locality River, Baltimore Harbor

1924

CHIEF OF PARTY

Robert J. Auld

LIBRARY & ARCHIVES

DATE .....

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Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: Maryland

11—5613

DESCRIPTIVE REPORT.

Hydrographic *Sheet No.* 4371

LOCALITY:

Patapsco River

Baltimore Harbor

~~Patapsco river to Sparrows Point~~

~~including Northwest Harbor, Curtis Bay and Curtis Creek.~~

192 4

CHIEF OF PARTY:

Robert J. Auld

Field Records

Nov. 3, 1924.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
27 volumes of sounding records for

HYDROGRAPHIC SHEET 4371

Locality: Baltimore Harbor

Chief of Party: R. J. Auld in 1924.
Plane of reference is mean low water reading
1.5 ft. on tide staff at Curtis Creek
3.5 " on autogauge at Ft. McHenry.

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginnding of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered wrong column.
7. Field reductions entered in "Office"column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tubeused not stated.
11. Sounding tube No. entered in column of"Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks

Chief, Division of Tides and Currents.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No.

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON October 23, 1924.

DESCRIPTIVE REPORT

To accompany Hydrographic Survey of Northwest Harbor, Baltimore.

The hydrography of Northwest Harbor or the Inner Basin of Baltimore Harbor was executed on a sub-plan of 1:4800 scale. The best available map showing the outline of docks was that of the Baltimore and Ohio Railroad drawn to the above scale.

The Harbor Board of Baltimore made some soundings in the area during March, 1924. The results of their survey were made available to the Coast and Geodetic Survey so copies of their original records were made. The soundings obtained by the Coast and Geodetic Survey were merely to supplement the development made by the Harbor Board.

The soundings made by the Harbor Board included a close development around all piers and in the various slips. These soundings have not been plotted but from examination it would seem that more than enough information needed for the compiling of the chart is available.

A blueprint showing soundings made by the Harbor Board on their cross channel lines is submitted with this report. A blueprint showing a survey made in 1922 by the U. S. Engineers is also submitted.

The results of the Harbor Board and Coast Survey soundings both reduced to mean low water are shown on a blueprint which was compiled in the field.

A table of statistics gives the few days on which work was executed on the sub-plan of Northwest Harbor.

An inquiry has been sent to the Baltimore and Ohio Railroad for information with respect to dredging which has been done under their direction in the vicinity of the company's wharfs at Locust Point.

R. J. Tuld

ADDRESS THE DIRECTOR
U.S. COAST AND GEODETIC SURVEY

AND REFER TO No.

DEPARTMENT OF COMMERCE

U.S. COAST AND GEODETIC SURVEY

WASHINGTON October 22, 1924.

DESCRIPTIVE REPORT

To accompany Hydrographic Sheet of Baltimore Harbor from Fort McHenry to Sparrows Point.

As directed by instructions dated March 24, 1924, a hydrographic survey of Baltimore Harbor was executed which included the area bounded by the Hanover St. Bridge over Middle Branch and extending southward to Sparrows Point. The area covered is substantially that shown on Chart No. 545 and included Curtis Bay and Curtis Creek. The survey of the Inner Basin or Northwest Harbor was executed on a subplan on a scale of 1 to 4800 to agree with some work done by the Harbor Board of Baltimore.

The control for the hydrographic positions was determined by planetable and included a large number of points located by triangulation. All prominent features such as water tanks, smoke stacks, flag poles and the outline of docks and shore line were plotted on the field hydrographic sheet from data secured either from the topographic sheet or topographic sheets of Baltimore Topographic Survey and industrial concerns. The agreement of details and azimuths of signals proved nearly always perfect. It is safe to say that a disagreement of ten meters does not exist in the plotting of any feature, either shoreline, signal or hydrographic position. In cases where weak fixes or poorly observed angles give a doubtful location, it was endeavored to tie the position into the nearest topographic position by an estimated distance. All hydrographic positions were plotted on the field sheet at the time observations were made and errors corrected. Throughout much of the work sensitive ranges controlled the heading of the boat and errors of one or two degrees were often detected in the reading of angles.

Especial care was taken in the selection of a leadsman and most of the work was accomplished by one individual. The relief leadsman was a young man of equal ability and showed the same care in endeavoring to obtain accurate soundings. The soundings were not plotted as taken but usually plotted on days when field work was not feasible, and sufficient time could be given to making proper selection. The chief of party was thus free to follow the soundings mentally and any unusual sounding could be verified by stopping the boat before the lead had been hauled in.

The boat used for this work was a twenty foot motor dinghy constructed by the Coast Guard. A sounding platform was fitted to the gunwales of the boat extending across the full width of the boat. The leadsman was thus given plenty of freedom of movement and could readily secure a sounding on either side if occasion required. A plotting table

was fitted to the gunwales, in a similar manner to the sounding platform, at the after end of the boat. Both of these had dowel pins which fitted into sockets in the gunwales and were firmly held in place by lashings which could be tightened with turn buckles. A flat awning supported by stanchions shaded the plotting table. A considerable amount of equipment could be carried in the boat and still leave the personnel of the party plenty of space in the boat. For this class of work, the type of boat proved very satisfactory.

On account of dredging operations, much of which has been done by private enterprise, numerous channels have been dug from the deep water channels (usually referred to as the government channels) to docks or basins adjacent to shore. Some of these channels are marked by private buoys and the more important ones have range beacons to guide shipping. These channels are privately maintained and are not examined except by a Lighthouse tender which may need to shift a buoy or other aid. It is believed that most of the ranges which have been established have been in conjunction with the Lighthouse Service.

As the bottom of the harbor is mud or silt, in general the depths will be found to vary uniformly except at points where dredging has changed the original contour. Therefore the essential part of the hydrography was the development of these dredging projects whether for channel approaches or alongside of wharfs and docks. Very little data are in the hands of any of the industrial concerns who have had dredging done in order to give access to their docks. As grounding can not cause serious damage to a vessel, many of the channels are used without a very definite idea of the depth of water.

It is not deemed necessary to describe any of the government channels which include Ferry Bar, Spring Garden, McHenry of the Main Channel, and Curtis Bay. These channels are surveyed and maintained by the U. S. Engineer Corps and the data relating to the same are forwarded by that bureau. In the area south of Fort McHenry an old channel leading to Port Covington connected with a channel continuous to the head of Middle Branch. This channel was called Spring Garden Channel. This channel has been abandoned with respect to maintenance by the U. S. Engineers and the new Ferry Bar Channel connects with the part of Spring Garden Channel above Hanover St. Bridge. When last surveyed by the U. S. Engineers in 1910, the part of Old Spring Garden Channel extending eastward from Port Covington to McHenry Channel had a depth of 27 feet. The results of the survey by the Coast and Geodetic Survey show that this channel has not deteriorated. Considerable use is made of this channel by tugs towing barges and car floats. The part of the old channel south of Ferry Bar Light is not used although a red spar marks the location.

Depths in the basin dredged by the Western Maryland Railway adjacent to their docks, were carefully developed. A blueprint showing a survey made by the railroad in 1920 is submitted with this report. On the south side of Ferry Bar Channel, the Arundel Corporation have a fleet of dredges in operation, which are excavating sand and gravel from the bottom. These dredges have not followed any definite plan and the result

is the development of numerous pot holes in the above area. Two channels marked by buoys provide access to the south shore of the Patapsco at this point. One channel leads to the plant of the Arundel Corporation and the other to the city refuse dump. Both are marked by spar buoys but these buoys have had no maintenance for so long that it is hard to tell if they have been painted and on which side they mark the channel. Both of these channels are good for 10 to 12 feet draft but as most of the craft cruising in this locality do not exceed 8 feet in draft, observation indicated that launches did not stay within the limits of the channels. Brush stakes indicate the limits of most of the shoals to aid the movements of the launches serving the dredges, which are gradually digging away these shoals.

To serve industries within the Fairfield section are four dredged channels: Maryland Drydock Co., Weyerhauser Timber Co., Union Shipbuilding Co. and Prudential Oil Co. These channels enter the McHenry Channel or the Ferry Bar Channel and all have range beacons erected as aids with the exception of the Union Shipbuilding Co. All of the channels are buoyed, the buoys being placed and maintained by the Lighthouse Service. From an examination of the soundings obtained in these channels it would appear that there is a minimum depth of 24 to 25 feet in the channels to Maryland Drydock and Union Shipbuilding wharfs. With aid of high tide it would be possible to get a ship with a draft of 27 feet to the slips of these concerns. However, most of the vessels using these two channels are usually in ballast previous to either entering drydocks or for repairs. The Weyerhauser Timber Company's channel is used by vessels coming from the Pacific Coast fully laden with lumber. This channel is uniformly dredged to 30 feet at mean low water. The channel seems rather narrow for big vessels but an excellent range follows the center line of the channel. The Prudential Oil Company's channel is ample in width and comparatively short with a good sized basin adjacent to the wharf. The face of the wharf is the only part used for docking. Vessels consigned to the F. S. Royster Fertilizer Works also use this channel and dock at the face of the Fertilizer Company wharf.

At Fishing Point the Mexican Petroleum Company dredged the area adjacent and filled in behind a bulkhead as shown on the topographic sheet. They have constructed a landing wharf with pile dolphins for mooring ships on the southern extremity of the point. From this wharf a channel or area about 100 meters in width has been dredged to connect with the Curtis Bay channel. This area and the slip adjacent to the wharf have a depth of 30 feet or more. In order to obtain extra material for the fill the shoal area to the northeast of the wharf was dredged so that a passage way over 100 meters in width with a depth from 15 to 18 feet connects Curtis Bay with the deep water off Wagners Point. This channel is marked by a red spar in about 12 feet of water located about 500 meters northeast of the wharf. It is not listed in the buoy list of the Lighthouse Service but appears to have been placed by them. It is suggested that the buoy listed as Fishing Point Shoal Buoy No. 2 be moved about 250 meters northwest to mark the south side of this new channel. Channel Buoy No. 4 marking the south end of Fishing Point Shoal should be moved 125 meters to the westward to agree with the proper position as shown on the chart. Many tugs operate in this vicinity and a great number use the

channel across the shoal referred to above. In connection with the deep draft channel to the Mexican Petroleum Company's wharf two diamond shaped range beacons appear to mark the eastern side of the dredged area.

At the Curtis Bay coal terminal of the Baltimore and Ohio Railroad an ample basin has been dredged around the docks and connecting with the Curtis Bay Channel. A dredged area also connects the face of the U. S. Alcohol Company's wharf with the government channel. Maximum draft vessels are able to go alongside of these wharfs.

A very narrow channel has been dredged from Curtis Creek to the Standard Fertilizer Company's wharf in Cabin Branch. The center line of this channel appears to be on the range: southeast corner of long wharf of Standard Guano Co. and Silo (Δ Dome) on hill east of Davidson Chemical Works. A range using the end of the dock and a point on the warehouse of the plant was pointed out to the superintendent of the works and a line of soundings run over it which showed that a maximum draft of about 24 feet could be carried to the first dock except at low water. This channel is only 60 feet in width, therefore vessels often are grounded unless skillfully handled. The part of the channel which turns southwest leading to the second wharf is not clearly marked and would require careful warping of a vessel to follow. About 20 foot draft can be taken alongside of this wharf.

The dredged project adjacent to the Curtis Bay Ordnance Depot is not as extensive as shown on the chart. A channel about 150 feet in width was dredged at Stahl Point about 25 feet in depth and continued about one third the distance to Thomas Point. From this point a slip about 100 feet in width varying from 15 to 18 feet in depth was dredged. North of Stahl Point very little dredging appears to have been accomplished so that the channel is governed by the natural depths of 23 or 24 feet in Curtis Creek.

The west side of Arundel Cove is bulkheaded adjacent to the U. S. Coast Guard Depot. About 16 feet is the average depth in the entering channel and in the basin within the cove. Coast Guard vessels have a range to aid them in entering the cove, together with some spar buoys. This range and buoys are shown on the topographic sheet.

Buoys in Thoms Cove mark the best water for going alongside the Quarantine Station wharf. A survey of the U. S. Engineer Office, Baltimore is submitted. This survey was made in anticipation of dredging a channel but the project has not been carried out.

On the south side of Sparrows Point, a wide and well marked channel leads from the main channel to the basin adjacent to the ore docks of the Bethlehem Steel Co. This channel appears to have a full 35 foot depth and easily accommodates the maximum draft for vessels coming to Baltimore. The channel leading to the fitting out wharfs of the shipbuilding plant on the

west side of Sparrows Point accommodates vessels coming there for docking or repairs. This channel is shown as being dredged to 25 feet and the results of this survey appear to corroborate the statement. The channel is marked by buoys in fair condition. Black spar buoy No. 7 was missing, however. A basin connecting with the channel has been dredged in front of the building ways south of the fitting out wharfs. A narrow channel shown as accommodating 20 foot draft leads to the coal pier. This channel is unmarked by buoys with the exception of a black and red midground spar. Tugs handling coal barges do not make use of this channel nor do they seem to avoid several shoals which have from 10 to 12 feet of water over them. These shoals will be referred to later; however the midground buoy referred to above should be shifted about 100 meters westward to properly mark the shoal for which it is probably intended. In the coal pier slip the average depth is only 15 to 18 feet due to loss of coal overboard while unloading.

The course for vessels entering Bear Creek follows the 25 foot channel of the Bethlehem Shipbuilding Co. to a point off the fitting out wharfs. Tugs handling car floats go to a transfer slip at Doyds Point. The slip has been dredged to a depth of 15 feet out to connect with the area of a natural depth of that amount. The Bear Creek natural waterway is well marked and vessels of moderate draft should have no difficulty.

While not a dredged project the channel east of Fort Carroll between the fort and Sollers Point Shoal is used to a great extent by shallow draft vessels which are required to keep clear of the main channel. A red spar marks the edge of the shoal and is well placed.

A channel was projected to connect the dock of The Aluminum Ore Company at Sollers Point with the deep water channel. This project was only partially carried out, the extent of which can be noted from the hydrographic sheet. In Bear Creek the Emergency Fleet Corproation established a ship yard during the war. A basin was dredged out in front of two launching ways and a slip deepened to about 18 feet was dredged in Clement Cove. A channel with 15 feet of water was dredged to connect with Bear Creek. Unger and Mahon have a boat yard for yachts in Peach Orchard Cove and have erected a range which gives a middle channel course in the cove.

About three quarters of a mile north of Sollers Point, a dredged channel leads from the natural depth of 12 to 15 feet to the dock adjacent to the Animal Quarantine Station. The depth of twelve feet in this channel shown on the chart appears to be borne out by the survey. This channel was probably used by the Munitions Plant whose property is south of the station as no dredging was done in connection with the small wharf on their property. Two unpainted spars mark the channel to the Quarantine wharf. The southernmost spar is misplaced, however, and should not be used as a guide.

An unpainted spar marks the channel leading to Sanford and Brooks Repair Yard near Dundalk. The dredged channel leads to a marine railway and has a depth of about 11 feet. Considerable floating equipment is tied up at this yard which does not use this channel but is moored in the slip on the north side of the dock. It appeared that sufficient dredging has been accomplished in this area to a depth of 9 or 10 feet. A short distance north of the Danford and Brooks plant is the wharf of a chemical works who have a pipe line leading ashore. Barges bring the refuse which is dumped into a well at the end of the dock and then dredged up and pumped ashore. No channel has been dredged and only craft drawing 8 feet or less are able to come to the wharf.

The channel in Colgate Creek was dredged during the war and several reconnaissance lines showed that the depth of 7 feet shown on the chart is more than possible. The natural channel south of the drawbridge across Colgate Creek limits the draft entering the creek. A project was in mind by the Harbor Board of Baltimore to dredge this part and it is recommended that inquiry be made if this project has been taken up.

The channel leading to the Pennsylvania elevator at Canton is well buoyed and of ample width with large turning basin adjacent to the docks. The chart shows 33 feet which is sustained by this survey. The docks of the Canton Company have a fan shaped area opening into the McHenry channel which has been dredged. Since the survey made by the field party, additional dredging has been completed by Sanford and Brooks and a request has been made for information. The dredged area is quite different from that shown on the chart in that all middle ground has been removed.

Shoal areas within the limits of Chart 545 are not very numerous. Shaded areas on the chart which might appear to be shoals quite often are only changes of a foot or so in the natural slope of the bottom. In the area east of Hanover Street Bridge the shoal areas are the result of dredging, many of which will be removed in time. These areas can not be described definitely and only need to be avoided by those conducting dredging in the vicinity. When the bottom has not been changed by dredging the contour remains as in previous surveys. This is true of the entire bay, in fact, with a few exceptions which will be noted.

Of the two twelve foot soundings to the east of Wagners Wharf, the one in latitude 39° 14' was found to have about 10 1/2 feet over it and was apparently the remains of a wreck. The other twelve foot sounding on the edge of the 18 foot curve was searched for unsuccessfully. A thorough search failed to reveal any evidences of a shoal area. This search was conducted under favorable circumstances. It is quite probable that this shoal area was formerly an oyster lump which may have been removed. Fishing Point Shoal was searched for and the depth shown on the chart found. The extreme shoal area is very small and since it has been known so definitely, it is probable that it also is a sunken wreck. The shoal sounding off Ferry Point in Curtis Creek was revealed in this survey.

It would seem that the dredged material excavated in making the slip at the Curtis Bay Ordnance Depot was thrown towards the center of the creek to form a bar. Shoaler depths than those indicated on the chart were found on this middle ground. The shoal point south of the Coast Guard Station is well marked by a private buoy.

Hawkins Point Shoal Buoy was not in place during the period of the survey. This shoal has not changed. The eleven foot spot about 300 meters to northward of Fort Carroll was searched for and not found as charted. The edge of Sollers Point Shoal is not over 100 meters from this point. As it is quite generally sandy bottom at this point it would be quite possible for this shoal spot to disappear. Sollers Point Shoal appears to have the same outline as shown on the chart.

In approximate latitude 39° 12'.8 and longitude 76° 30'.3 are three shoals. One of these shoals having 13 feet over it is not shown on the chart. This shoal is about 125 meters west of the position of the middle ground buoy and on the edge of the channel leading to the coal pier of the steel plant. Almost directly north about 150 meters is a shoal indicated on the chart as 11 feet. A depth of ten feet was found in this vicinity. About 300 meters to the westward a shoal sounding of 12 feet was obtained at the point where the same depth is indicated on the chart.

In approximate latitude 39° 12'.1, longitude 76° 30.'1, the shoal area, indicated by 11 feet on the chart, was investigated. A least depth of 12 feet was obtained. This shoal was indicated on a previous line and the detached sounding of 12 feet represents the results of numerous soundings in feeling around with the lead. The six foot spot about 500 meters south of Sparrows Point near the 12 foot curve was developed but the least depth obtained was 10 feet. The wreck shown in this vicinity has a least depth of one foot with about 3 feet over the rest of the hulk. The sixteen foot spot in latitude 39° 12'.5, longitude 76° 30'.7 was searched for. The area was carefully developed and a uniform depth of 18 to 19 feet was found in the locality. One sounding of 16 feet was obtained but is extremely doubtful. A slight delay on the part of the leadsman in reading the line prevented the sounding from being verified immediately before the lead was lifted off the bottom. Careful search later to obtain a like sounding was unsuccessful. The leadsman was quite reliable in his reading of the leadline so the sounding has been allowed to stand.

Several twelve foot spots east of the channel to the ore dock do not indicate any great difference in contour and may have been oyster lumps at one time. This area was evenly covered by sounding lines and no material change in the slope of the bottom was noted. A ten foot sounding was obtained about 400 meters south of the slag dump of the steel plant a short distance outside of the normal position of the two fathom curve. This shoal in approximate latitude 39° 12'.6, longitude 76° 28'.2. A pinnacle rock of small area is well marked and correctly located by the middle ground buoy about three quarters mile south by

west of Rear Range Light, Cut Off Channel. This rock has a depth of slightly more than one foot over it at mean low water.

The sandy bottom from Sollers Point to Colgate Creek is somewhat uneven inside of the 18 foot curve and a close development was endeavored. A six foot sounding in deeper water about one quarter mile south of Colgate Creek draw was verified. A three foot spot west of Point Breeze was searched for carefully and not found. The contour of the bottom is very even at this point and unless caused by a wreck or rocky ledge it does not seem possible for a shoal of such shallow depth to exist at this point. The action of wind and surf is very pronounced along this stretch of shore and in the case of a winter storm with ice and other debris acting against a shallow spot, it would seem possible to produce sufficient scouring of the bottom and thus remove any irregularity.

It was not attempted to make a thorough survey of the government dredged channels. These channels receive a careful examination by the U. S. Engineers and are given maintenance attention as required. The slopes of these channels are abrupt and it is impossible to clearly define the limits of the channels from a moving boat. In plotting soundings at the edge of these channels due allowance should be made.

A table of statistics is attached to this report together with the following hydrographic surveys by other individuals.

Western Maryland Railroad - Docks and Basin at Port Covington.

U. S. Engineer Office, Baltimore - Thoms Cove.
- Location of Ferry Bar Channel.

R. J. Auld

Summary of Hydrographic Survey
Baltimore Harbor. 1934.

Date	Day	Number of Miles	Number of Positions	Number of Soundings.
April 14	A	8.0	106	542
April 15	B	9.9	93	500
" 16	C	13.3	115	673
" 17	D	7.8	99	535
" 21	E	11.3	110	678
" 28	F	5.5	46	273
" 24	G	13.2	111	582
" 26	H	8.0	89	400
" 28	J	9.8	91	520
" 29	K	0.3	6	30
" 30	L	5.5	38	325
Totals for month		93.9	871	5093

Area covered in April- 3 3/8 square miles.

May 2	M	11.5	81	677
" 3	N	8.2	51	336
" 5	P	12.4	87	703
" 6	Q	15.2	93	717
" 7	R	7.0	99	584
" 9	S	5.5	74	430
" 10	T	4.0	46	267
" 15	U	8.5	88	543
" 16	V	7.-	97	540
" 17	W	4.2	57	311
" 19	X	10.5	104	590
" 20	Y	1.-	8	61
" 22	Z	5.0	90	527
" 23	AA	7.3	109	650
" 27	BB	1.5	31	121
" 28	CC	2.6	77	393
" 29	DD	1.3	54	236
" 31	EE	4.4	62	314
Totals for month		117.1	1335	8090

Area covered in May - 3 square miles.

Summary of Hydrographic Survey
Baltimore Harbor. 1924.
2.

Date	Day	Number of Miles	Number of Positions	Number of Soundings
June 2	SS	3.7	312	731
" 3	OO	10.9	183	515
" 4	HH	9.5	118	563
" 5	JJ	12.1	129	657
" 6	KK	6.7	91	505
" 9	LL	5.0	54	280
" 11	MM	5.0	36	217
" 13	NN	5.6	46	252
" 14	PP	3.3	38	210
" 16	QQ	9.2	99	612
" 17	RR	5.8	74	418
" 18	SS	13.0	118	706
" 19	TT	11.3	109	645
" 20	UU	15.5	124	887
" 21	VV	6.2	71	450
" 23	WW	14.7	119	788
" 24	XX	10.7	85	560
" 25	YY	4.2	52	324
" 26	ZZ	7.5	101	577
" 30	A"	8.0	76	421
Totals for month		167.3	1725	10095

Area covered in June 6½ square miles.

July 1	B"	8.5	120	653
" 2	C"	6.0	84	417
" 3	D"	4.8	66	371
" 10	E"	5.3	35	280
" 11	F"	15.2	117	805
" 12	G"	7.2	64	443
" 14	H"	9.5	86	557
" 15	J"	8.0	77	497
" 16	K"	6.0	61	473
		70.2	708	4496

Summary of Hydrographic Survey.
Baltimore Harbor. 1924.
3.

Date	Day	Number of Miles	Number of Positions	Number of Soundings
July 17	[illegible]	4.7	62	344
" 18	[illegible]	0.5	11	85
" 19	[illegible]	7.0	87	431
" 28	[illegible]	5.3	80	423
" 29	[illegible]	7.8	67	523
" 30	[illegible]	2.5	38	175
" 31	[illegible]	[illegible]	[illegible]	[illegible]
Totals for month		406.5	1143	7051

Area covered in July.3 1/6 square miles

August 1	[illegible]	3.5	84	335
" 2	[illegible]	—	13	13
" 6	[illegible]	5.0	78	459
" 7	[illegible]	2.2	33	145
Totals for month		10.7	210	952

Area covered in August —split lines.

Hydrographic Survey
Inner Harbor, Baltimore, Md.
1924.

Date	Day	Number of Miles	Number of Positions	Number of Soundings
July 23	[illegible]	9.8	90	448
" 24	[illegible]	8.0	84	473
" 25	[illegible]	4.7	66	321
		22.5	240	1241

Area covered in Inner Harbor during July.1 1/3 square miles.

Total 37,000

REPORT ON VERIFICATION OF HYDROGRAPHIC SHEET
No. 4371

The smooth sheet is clean and well protracted.

A few positions were protracted with the use of the wrong signal.

The time interval was not carefully adhered to in the plotting of soundings.

The drafting conforms to the general instructions for field work.

All shoals as shown on the chart have been carefully developed and in most cases verifying the chart.

All of the positions of the buoys have been verified and note should be made that the positions do not check the charted positions but in most cases are placed in the best location to show the shoals as developed by this survey.

Reconnaissance verified the 7-foot channel in Colgate Creek but no record was made for that work. See descriptive report.

There are two 14-foot soundings that were not inked in as they are thought to be 20 feet in accordance with the adjacent soundings and the probability of the leadsman being in error by one fathom.

One is 500 meters south of signal Trol and the other is about 500 meters west of signal Point.

H.M. Edmonston

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

April 14, 1925.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4371

Baltimore Harbor, Maryland

Surveyed in 1924

Instructions dated March 24, 1924

Chief of Party, R. J. Auld.

Surveyed by R. J. Auld.

Protracted and soundings plotted by L. S. Hubbard.

Verified and inked by H. R. Edmonston.

1. The records conform to the requirements of the General Instructions. The descriptive report is unusually complete.

2. The plan and character of development satisfy the General instructions.

3. The plan and extent of development satisfy the specific instructions. The spacing of sounding lines is considerably closer than called for, but it is understood that verbal permission was granted for the departure.

4. The sounding line crossings are adequate and the information is sufficient for drawing the usual depth curves.

5. The field plotting was completed to the extent prescribed by the General Instructions.

6. With the exception of a few instances of the wrong signal being used the protracting was excellent, but the time intervals were not carefully adhered to in plotting the soundings.

7. There are no other recent surveys adjoining this one.

8. All critical places were carefully developed, except in two cases: A 29 foot sounding close to lighted buoy No. 3 and a 30 foot sounding in mid-channel 400 meters southeast of the same buoy. No additional surveying is required.

9. The large amount of detail and the complicated control of this sheet made the survey a difficult one. The work is most creditable to those engaged upon it.

10. The character and scope of the surveying are excellent and the field drafting good.

11. Reviewed by E. P. Ellis, April, 1925.

GPO

Form 537
11—6512

4371

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

C C

U. S. Coast and Geodetic Survey.

Register No. 4371

State . . Maryland . . . . . .

General locality . Patapsco River . . . . . .

Locality . . Baltimore Harbor, ~~Fort McHenry to Sparrows Point~~
~~Also Northwest Harbor, Curtis Bay and Curtis Creek, to Thomas PT.~~

Chief of party . . R.J. Auld . . . . . .

Surveyed by . . R. J. Auld . . . . . .

Date of survey . . . April 14 - August 3 . 1924 . . . . .

Scale . . 1:10,000 . . . . . .

Soundings in . . . Feet . . . . . .

Plane of reference M.L.W., Fort McHenry Gauge. . . . . .

Protracted by . . . . . Soundings in pencil by . . . . .

Inked by . . . . . Verified by . . . . . .

Records accompanying sheet (check those forwarded):

Des. report, ___1___ Tide books, ___1___ Marigrams, ___2___ Boat sheets,

___27___ Sounding books, _____ Wire-drag books, _____ Photographs.
including 4 vol. Soundings copied from Harbor Board records.

Data from other sources affecting sheet . . . . . .
1 sheet Wm. Md. Ry. Soundings Port Covington.
1 " U.S. Engrs. Thoms Cove
1 " " " Ferry Bar
1 " " " Northwest Harbor

Remarks: Harbor Board of Baltimore, Northwest Harbor.

Hydrographic Smooth sheet plotting not finished when recorded.

Form 567
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

4371

To be superseded

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

C O

Register No. 4371

State . Maryland

General locality . . . ~~Baltimore~~, Md. Patapsco River

Locality ~~Patapsco~~ Baltimore Harbor including North west Harbor

Chief of party . R. J. Auld

Surveyed by . R. J. Auld

Date of survey . April 4 - Aug. 3, 1924

Scale . 1:10,000

Soundings in . . unfinished ? Feet

Plane of reference . U. S. C. & G. S. Station F. H. McHenry - M. L. W.

Protracted by L. H. Hubbard Soundings in pencil by —

Inked by . — Verified by —

Records accompanying sheet (check those forwarded):

Des. report, 1 → 878A1.1 Tide books, 1 Marigrams, ~~2~~ Boat sheets,

86129-23 → 3 Sounding books, — Wire-drag books ~~not~~ Photographs.

Data from other sources affecting sheet

86128—4 Vol. Sounding records - Harbor Board, Baltimore
6 ea. Blueprints - U.S. Engineers Harbor Board.
Wm. Md. Railway.

Remarks: